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ABSTRACT

This presentation, through examples and practical suggestions, shows how systematic design can make instructional telecommunications more effective and efficient. There are several approaches to the design of systematic instruction; one example is the system used by Kentucky Educational Television in an instructional series preparing adults for the GED High School Equivalency certificate. That system was composed of seven steps: (1) determination of objectives, (2) identification of content needed; (3) selection of instructional strategy; (4) production of programs and materials; (5) validation of the instruction; (6) promotion and utilization of the materials, and (7) evaluation. The systematic approach may involve a team effort in developing television based instruction. This is both useful and dangerous, and is endorsed providing that it is recognized that the road from conception to completion is not likely to be smooth, and that there exists some final point or locus of decision. (WBC)

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# INSTRUCTION: OVERCOMING THE GOD-NEVER-MEANT-YOU-SHOULD-DO-IT-THAT-WAY SYNDROME

October 25, 1976

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1976 NAEB Convention, Chicago, Illinois

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It's Monday October 25, you are in the Waldorf room of the Hilton Hotel, Chicago, Illinois.

This session is titled: Instruction: Overcoming the God-Never-Meant-You-Should-Do-It-That-Way Syndrome, which is a long way of telling you that we're going to discuss some approaches to designing effective and efficient instruction for telecommunications, primarily radio and television.

My name is Ken Warren. I'll tell you more about that later. My partner in crime this afternoon is Pat A. Conner, Instructional Radio Specialist in the Office of Instructional Television and Radio for the South Carolina Department of Education. We'll now begin:

Once upon a time a Sea Horse gathered up his seven pieces of eight and cantered out to find his fortune. Before he had traveled very far he met an Eel, who said,

"Psst. Hey, bud. Where'ya goin'?"

"I'm going out to find my fortune," replied the Sea Horse, Proudly.

"You're in luck," said the Eel. "For four pieces of eight you can have this speedy flipper, and then you'll be able to get there a lot faster."

"Gee, that's swell," said the Sea Horse, and paid the money and put on the flipper and slithered off at twice the speed. Soon he came upon a Sponge, who said,

"Psst. Hey, bud. Where'ya goin'?"

"I'm going out to find my fortune," replied the Sea Horse.

"You're in luck," said the Sponge. "For a small fee I will let you have this jet-propelled scooter so that you will be able to travel a lot faster."

So the Sea Horse bought the scooter with his remaining money and went zooming thru the sea five times as fast. Soon he came upon a Shark, who said,

"Psst. Hey, bud. Where'ya goin'?"

"I'm going to find my fortune," replied the Sea Horse.

"You're in luck. If you'll take this short cut," said the Shark, pointing to his open mouth, "you'll save yourself a lot of time."

"Gee, thanks," said the Sea Horse, and zoomed off into the interior of the Shark, and was never heard from again.

The moral of this fable is that if you're not sure where you're going, you're liable to end up someplace else. (From: Preparing Objectives for Programmed Instruction, by Robert F. Mager, Fearon Publisher, Inc. 1962, San Francisco)

My name is Ken Warren. I am an itinerant telecommunications person presently affiliated with the University of Mid-America, with an office in Lincoln, Nebraska. Prior to joining UMA, which is not town in Arizona, I was with Kentucky Educational Television in Lexington. Before that, my formative years were spent in Oregon, California, then Oregon again. My experience has been in commercial and then educational radio and television broadcasting; and for the past six or eight years (depending on when you start counting) I have been involved with instructional telecommunications for post-secondary, adult and continuing education in designing, producing, researching, marketing, utilizing, and administering projects and activities related to providing instruction to people beyond, or at least past the age of, high school.

Question One:

The title for this session - Overcoming the "God Never Meant You Should

Do It That Way" Syndrome, is: (1) designed to arouse your curiosity and attract you for a few minutes, at least until you find out what the hell it means; (2) derived from personal experience in dealing with and attempting to treat the syndrome mentioned in the title; (3) meant to convey or maybe even kindle a spark of expectation that it may be possible to really accomplish what the title implies.

The correct response is, all of the above.

The goal or objective of this presentation is to provide information leading to awareness and knowledge of how systematic design techniques (or do you prefer methods?) can make instructional telecommunications more effective and efficient. Now, when I say "more effective and efficient" you may wonder, "compared to what?" Well, compared to past and maybe even present methods of presenting instruction, that's what.

Our plan for this session is to begin providing this information as the first step leading to a desired outcome of more effective and efficient instruction resulting in improved learner performance. I will attempt something of an overview of systematic instruction as applied to television for adult and higher education; Pat Conner will provide some specific examples of systematic instruction for use in grades K thru 12.

There are several methods of applying systematic development to instruction. There is the NAEB Educational Broadcasting Institute for instructional design in radio and television. I commended it to your attention. There's another Educational Broadcasting Institute with a little broader based approach to designing effective instruction with applications to radio and television. There is an ERIC paper called "The Systematic Development of Instruction: An Overview and Basic Guide to the Literature". (It can be

obtained from ERIC Document Reproduction Service (EDRS), P. O. Box 190, Arlington, Virginia 22210. The cost is $1.88 with postage.) Pat Conner has a system called the 4D system, which I am sure she will explain in more detail. All of these systems are based on effectiveness and efficiency as measured in terms of learner achievement according to specific learning objectives derived from careful analysis of the tasks or achievements necessary for acceptable performance.

I just mentioned several approaches to the design of systematic instruction. The EBI, the ERIC document, and a few others. Allow me to describe one more: the system used by Kentucky Educational Television in the design and development of a television-based instructional series for preparing adults to qualify for and pass the exam for the GED high school equivalency certificate. The system used was composed of seven steps:

1. Determination of objectives: that is, what it is that you want the learner to be able to do.

2. The identification of the content needed: what a person needs to know, or needs to be able to do, in order to perform satisfactorily.

3. The selection of instructional strategy: the most efficient and effective way of presenting the needed information.

4. The production of programs and accompanying materials.

5. Validation of the instruction: does it work?

6. Promotion and utilization of the materials produced: get people to become aware of it and help them use it properly.

7. Evaluation: did it really perform the way you wanted to? "It" being the instructional package you have prepared.

In the case of the Kentucky project, the goal, or the objective, was to prepare the adult to qualify for and pass the GED exam. That, of course, gives rise to some other objectives in terms of the GED exam itself. It is composed of five parts: Social Studies, Literature, Natural Science, Grammar and Mathmatics. So the simple statement of the objective in that case would be that every student ought to be able to pass in every section of the exam. At that point, of course, you become involved in task analysis. What are the skills or the information needs that a person has to possess in order to pass those sections of the GED exam? So you analyze the task that has to be performed in order to break it down into specific learning objectives.

The second step is identifying the content involved. It may help here to apply a fundamental criterion to any objective or content item in the design of any program. That criterion would be: Is it a "need to know" item? Or is it a "nice to know" item? If it is a need-to-know item, it's included. If it's a nice-to-know item, it may be deferred on the basis of how much information you have to present in what kind of time frame, and with what kind of instructional strategy. If it is a nice-to-know item and it is deferred, maybe it can be covered or accommodated in some other way without going directly into your particular instructional package. That may sound a little bit dogmatic, but it sure is efficient.

The third point in the design system would be selection of instructional strategy. It may sound superfluous to dwell in some detail on instructional strategy when we already said this is a television-based series with supporting print material, but there is more to strategy than simply broadcasting a series of programs covering the five parts of the GED exam. In the case of the Kentucky project, it was interactive instruction, whereby the

participant is actively involved with the instructional material during each broadcast rather than passively receiving information. This interaction is facilitated by means of student study guides corresponding with the subject area treatment by the broadcasts themselves. During the broadcast, after each unit of instruction is presented, students have the opportunity to complete practice exercises in the study guide and to receive immediate confirmation or correction from the broadcast before proceeding to the next unit of instruction.

In addition to practice exercises, each study guide contained, for each unit covered, a statement of the learning objective, vocabulary, content summary, and additional exercises designed to strengthen mastery of the content covered. So the study guide served a dual purpose: as an interactive learning device, and, upon completion of the programs covered by its material, it became a personal reference manual which the adult could use for review prior to taking the GED exam itself.

The fourth step in the system was the production of the programs and accompanying materials. That's pretty simple, isn't it? You design it, and then you go make it. The particular scheme involved in the GED project was to avoid the Talking Face -- no teacher or lectures as such -- rather, a friendly, knowledgeable host or companion for the programs in a given subject, with whom the audience could relate and whom they might enjoy watching.

The idea was to present this instruction or information in such a way that participants in the series would be "turned on" rather than "turned off" by it. Keeping in mind that the majority of this particular audience had an unsatisfactory experience with traditional approaches to teaching,

the programs steered away from traditional classroom type instruction, and attempted to provide interesting, even entertaining, instructional experiences.

Step five was Validation. That word lately has been replaced I think, by a phrase called Formative Evaluation. In any case, it means, in this context, testing the stuff before you finally release it out there for the rest of the world. So the ultimate test of design of the programs was in the validation process. Try to find out if that instruction really works, really accomplishes what it was supposed to do. Before the GED series was broadcast, the programs and accompanying materials were tested pretty extensively in small groups of 6 to 10 people with a particular group viewing all programs in a given subject matter area. Some of these groups contained members of a regular, organized class, while other groups were composed of people attending learning centers to study independently. And occasionally, a test of the individual by him or herself, because one of the intended uses of the series was for individual independent study.

The scheduling for this testing simulated the final broadcast schedule as far as time intervals between programs was concerned. For example, if the programs on literature were to be shown twice a week, for two weeks, that was the pattern on which the individuals were tested with the literature section.

I spoke about promotion and utilization. That was step six in this system. Without a comprehensive utilization strategy, any series might remain an unused collection of media and materials. You need people to make the series or the instruction happen: The people who are your intended audience, and people who are going to facilitate the delivery of that instruction and information.

Some of the major components you might want to consider from a promotion and utilization aspect would be:

Outreach: How to utilize existing channels of communication to inform your intended audience of the opportunity to avail themselves of the instructional materials you have prepared. And certainly, people power (manpower): Determining the type of personnel needed to implement the series. Do they need any special training? What kind? How much? Who's going to provide it? In this case, of course, television performed an important function not only to deliver the instruction, but it also could be used to provide the in-service or the training or the workshop activities that dissemination groups might have to have available.

The materials and other information accompanying the television programs have to be distributed and disseminated. There might be a counseling aspect to the promotion and utilization. Assisting members of your intended audience to make the best use of the materials you have available for them, or maybe even advise them or counsel them away from it into some other channel of activity if the particular thing you've designed and produced isn't exactly what they need or are ready for at this time. And something that very often gets overlooked is Follow-up: Finding out what effect all of this instruction has on the student. The success of this utilization strategy depends on coordination as well as cooperation and on some promotion that needs to take place to develop public awareness of the materials you have ready and how they can be accessed and how to take advantage of the information you have.

The seventh step was Evaluation. Earlier, I spoke of validation, testing

selected individual instructional units from the series or package. By evaluation, we mean a collection of data that enables you to make judgements on the overall effectiveness of the entire instructional series or package. You will want to compile for as many participants as possible a complete history of their experience with the instruction you've made available and they've experienced so that you can find out, as I said, whether it really does work or not. In addition you might want to compile some sort of a "happiness index" that tells you in a subjective way of how they like it, or if they like it.

That's a very brief but hopefully somewhat comprehensive description of an instructional design system as applied to a specific project. There are other systems and activities going on besides that one which comes from the history of a few years ago. There is one at the University of Mid-America at the moment in Lincoln, Nebraska. The design system there involves a team approach to developing television-based instruction. A team composed of a content specialist, an instructional design specialist, a media production specialist, and an evaluation specialist. The team approach is useful but fraught with peril. It's useful in that you meld, combine, coordinate the talents and the expertise of people from various specialties to provide as the end result a totally systematic and effective instructional package that will be useful to the person who enrolls in it. It's fraught with peril, in that four people with such diverse specialties really have to know how to get along with each other as well as with some other parts of the world that they are not totally aware of at any given moment. But on balance, I would endorse the team approach so long as you pay attention to and accommodate some of the caveats that I am going to

conclude with.

It is not always--in fact, seldom, if ever--a smooth road from conception to completion. Some things are sure to arise to give you problems, cause you difficulty, and perhaps even make you question why you chose this particular line of work.

I have found in my personal experience (and I do not offer this as an attributable generality), that content people, particularly instructors from classrooms at any level, but most particularly instructors at the college level, are the hardest ones to deal with. The most innovative, the most open minded, the people most willing to experiment I have met, are in the elementary grade teaching situation. I see some elementary grade teaching situation people shaking their heads as well. Well, maybe I've been away from it too long.

Another caveat:

At any point in the design process, instructors may be in unknown need of certain counseling assistance by you as to the merits of a system which demands precise definition of what somebody should be able to do, and which information is needed. That's a pretty radical approach to lay on a college professor.

Somebody has to be in charge. Any effort combining various skills and competencies requires a final point or locus of decision. You can talk about things for a long time, but somebody finally has to say, "Let's quit talking and go make it and do it this way." Somebody has to be in charge.

Anytime things appear to be going well, you have overlooked something. Unless you are very careful, any project involving a systematic approach

to design, development and production could take twice as long as you planned for it, cost twice as much to make, and might produce only half of what you expected.

You can have different outcomes, but these are the things to be aware of and to guard against. And if you follow this kind of systematic approach you'll undoubtedly accumulate a large amount of personal information and experience about the contrasts between theory and generalization, and the practical, real world. And if you keep adequate written records, you may be invited to participate in a session like this. Thank you.

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